

### Summary of Invention

However, in order to measure the bit error rate, the PRBS signal must be passed through the transmission network 300. Accordingly, actual broadcasting of the digital broadcasting must be interrupted during the time that the PRBS signal is passed through the transmission network 300.

The present invention has been made in consideration of the above-mentioned circumstances, and an object of the present invention is to provide apparatus and so forth which is capable of executing measurement of the bit error rate in the transmission network used for the digital broadcasting during the time that the transmission network is used.

According to the present invention ~~described in claim 1~~, a bit error measurement apparatus for measuring a bit error of a transmission network through which transmission of a packet having digital data to be transmitted is executed, includes: a packet extraction unit for extracting an equivalence packet whose all of the digital data should have the same values from among the packets transmitted through the transmission network; a data comparison unit for comparing the digital data of the equivalence packet to comparison data that should have the value of the digital data of the equivalence packet; and an error judgment unit for judging the data as an error when result of the comparison is disagreement.

According to a bit error measurement apparatus constituted as described above, the packet contains NULL packet whose all of digital data to be

transmitted is 0 (zero) in favor of adjustment of rate and so forth. The whole digital data of the NULL packet should have 0 when transmitted through the transmission network, however, actually, since the bit error occurs, bits of 1 not 0 appear caused by the bit error.

Accordingly, it is possible to judge whether the bit error occurs in such a way that comparison is made between comparison data (if NULL packet; "0") and an equivalence packet while extracting the equivalence packet whose all of the digital data should have the same value, such as the NULL packet and so forth.

Moreover, since it is possible to extract the equivalence packet while allowing the packet to be transmitted through the transmission network, the bit error can be measured during the time that the transmission network is used.

*SAC*  
*SAC* The present invention ~~described in claim 2~~ is a bit error measurement apparatus ~~according to claim 1~~, wherein the comparison data is either 0 or 1.

According to the present invention described in claim 3, a bit error measurement method for measuring a bit error of a transmission network through which transmission of a packet having digital data to be transmitted is executed, includes: a packet extraction step for extracting an equivalence packet whose all of the digital data should have the same values from among the packets transmitted through the transmission network; a data comparison step for comparing the digital data of the equivalence packet to comparison data that should have the value of the digital data of the equivalence packet; and an error judgment step for judging the data as an error when result of the comparison is

disagreement.

The present invention ~~described in claim 4~~ is a computer-readable medium having a program of instructions for execution by the computer to perform a bit error measurement process for measuring a bit error of a transmission network through which transmission of a packet having digital data to be transmitted is executed, including: a packet extraction processing for extracting an equivalence packet whose all of the digital data should have the same values from among the packets transmitted through the transmission network; a data comparison processing for comparing the digital data of the equivalence packet to comparison data that should have the value of the digital data of the equivalence packet; and an error judgment processing for judging the data as an error when result of the comparison is disagreement.

According to the present invention ~~described in claim 5~~, a bit error measurement apparatus for measuring a bit error of a transmission network through which transmission of a packet with digital data to be transmitted is executed, includes: a packet extraction unit for extracting a packet for measurement to measure a bit error from among the packets transmitted through the transmission network; a data comparison unit for comparing the digital data of the packet for measurement to comparison data that should have the value of the digital data of the packet for measurement; and an error judgment unit for judging the data as an error when result of the comparison is disagreement.

The present invention ~~described in claim 6~~ is a bit error measurement apparatus according to ~~claim 5~~, wherein the comparison data is a pseudo-random

signal.

11 According to the present invention ~~described in claim 7~~, a bit error measurement method for measuring a bit error of a transmission network through which transmission of a packet with digital data to be transmitted is executed, includes: a packet extraction step for extracting a packet for measurement to measure a bit error from among the packets transmitted through the transmission network; a data comparison step for comparing the digital data of the packet for measurement to comparison data that should have the value of the digital data of the packet for measurement; and an error judgment step for judging the data as an error when result of the comparison is disagreement.

12 The present invention ~~described in claim 8~~, is a computer-readable medium having a program of instructions for execution by the computer to perform a bit error measurement process for measuring a bit error of a transmission network through which transmission of a packet having digital data to be transmitted is executed, including: a packet extraction processing for extracting a packet for measurement to measure a bit error from among the packets transmitted through the transmission network; a data comparison processing for comparing the digital data of the packet for measurement to comparison data that should have the value of the digital data of the packet for measurement; and an error judgment processing for judging the data as an error when result of the comparison is disagreement.